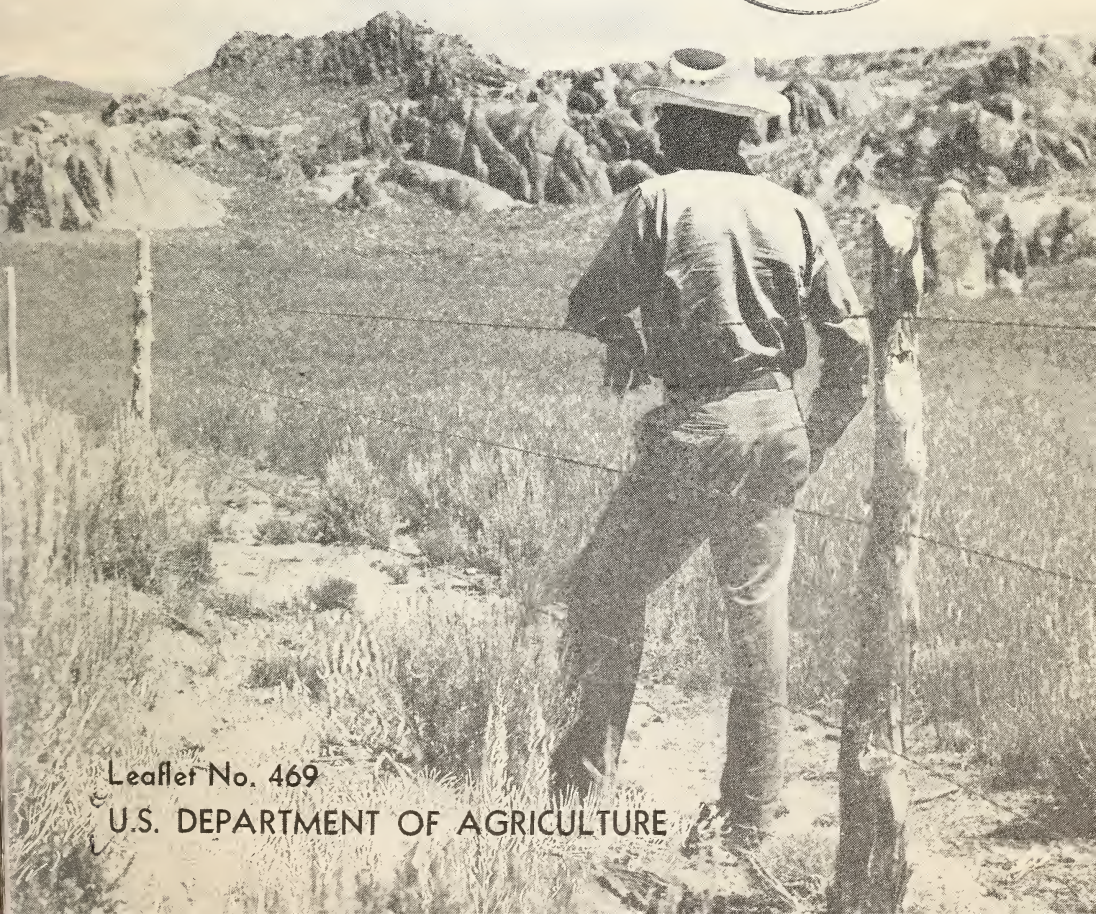


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GROWING CRESTED WHEATGRASS

in the
Western
States



Leaflet No. 469

U.S. DEPARTMENT OF AGRICULTURE

GROWING CRESTED WHEATGRASS

in the Western States

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Crested wheatgrass,¹ a perennial bunchgrass from central Asia, is hardy, drought resistant, and long lived. It has been the most successful of all introduced grasses in the northern Great Plains.

It is used for seeding cultivated areas and is popular for reseeding abandoned croplands. It volunteers freely from shattered seed; good stands often develop from thin initial stands.

Crested wheatgrass can be grazed in early spring at a much heavier rate than native range, and it is ready for grazing 2 to 3 weeks earlier. Because it can be grazed early and is palatable and nutritious in the early stage of growth, it is valuable for calving and lambing pastures.

If it is cut after heading but before flowering, crested wheatgrass makes good hay. The hay cures easily and remains green in the stack much longer than the hay made from many other grasses.

Crested wheatgrass also can be used for roadside plantings, erosion control, and wildlife cover.

WHERE IT GROWS

Crested wheatgrass is adapted to the northern Great Plains and westward to the Sierra Nevada Mountains. It does well in the big sagebrush zones, in park areas of the ponderosa pine zones, in pinyon-juniper woodlands, and in openings of mountain brush. In the southern part of its range, it has been successful only at elevations between 5,000 and 9,000 feet.

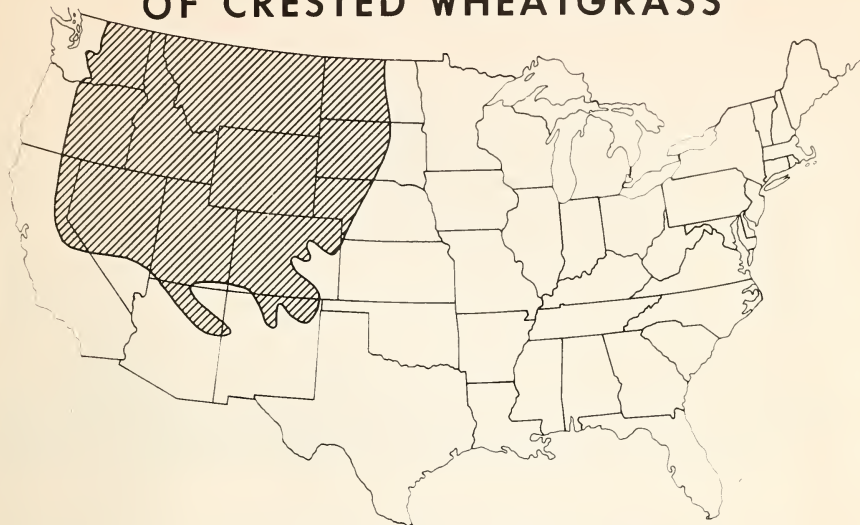
Within its area of adaptation are many small areas—high elevations, mountain meadows, and irrigated lands—where it is not successful or where other grasses are better adapted.

Because it utilizes soil moisture effectively and because it becomes dormant in hot, dry weather, crested wheatgrass is extremely drought resistant. It has been most successful in areas that receive 9 to 15 inches of rainfall annually. In the southern part of its range it needs a minimum of 12 inches of rainfall annually.

Crested wheatgrass survives the coldest temperatures encountered in its area of adaptation. No established stands are known to have been killed by extremes of cold in this area.

¹ The species referred to in this leaflet as crested wheatgrass is *Agropyron desertorum* (Fisch.) Schult. It is also called standard crested wheatgrass.

GENERAL AREA OF ADAPTATION OF CRESTED WHEATGRASS



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This grass is adapted to many soil types; it does well on most productive soils from sandy loams to heavy clays. It is moderately tolerant of saline soils, but not so tolerant as tall wheatgrass or Russian wildrye.

VARIETIES

Commercial crested wheatgrass plants are highly variable in appearance. Some are leafy and fine stemmed; others have few leaves and stiff, coarse stems. The heads may be dense with seeds or lax. The seeds may be awnless or have pronounced awns. The stems develop in dense tufts and may grow to a height of 3 feet.

Two named varieties of crested wheatgrass are available—Nordan and Summit.

Nordan was developed at the U.S. Northern Great Plains Field Station, ARS., Mandan, N. Dak. It was released in North Dakota in 1954.

Nordan is superior to commercial crested wheatgrass in the following characteristics:

- The seed is pure.
- Seeds are larger, with little or no awn.
- Seedling vigor and first-year growth are greater and stands are easier to establish.
- The plants, heads, and seeds are more uniform.
- Plants are more erect and resistant to lodging.
- Heads are more compact.

This variety is widely adapted and is now grown throughout the West. Seed is available in quantity.



UTAH—1032

Disk plowing unprofitable rangeland prior to reseeding with crested wheatgrass.

Summit, developed in Canada, was selected from commercial crested wheatgrass. It is grown primarily in Canada.

ESTABLISHING A STAND

Preparing the Soil

Crested wheatgrass should have a firm seedbed that is as free of competing plants as possible.

Summer fallow, clean grain stubble, and clean corn ground make good seedbeds without further preparation.

Cultivate weedy abandoned croplands if the weeds are perennials. If the weeds are annuals, the land needs no preparation before seeding.

Before seeding depleted rangelands, turn the soil with disk plows. To prepare seedbeds on rough,

brush-covered lands, use heavy-duty equipment. You may be able to rent or borrow this equipment through your local Soil Conservation District.

Seeding

For seeding crested wheatgrass, use clean, high-quality seed that weighs at least 22 pounds per bushel. For best results use Nordan variety.

SEED MIXTURES.—In areas where it can be grown successfully, alfalfa seeded with crested wheatgrass increases the yield of the grass and helps to increase productive life of the stand.

If stands are to be used for pasture, plant no more than 1½ pounds of alfalfa per acre. More alfalfa in the mixture may cause bloat in livestock.

If the stand is for hay production, seed up to 3 pounds of alfalfa per acre with the grass.

Sweet clover, which is biennial, is less satisfactory in mixtures than alfalfa. Though it usually disappears the second year after planting, sweet clover may increase production of crested wheatgrass through the third year.

TIME OF SEEDING.—The time to seed crested wheatgrass depends on soil-moisture availability, on the type of seedbed, and on when the rancher can do the job.

Early fall seeding generally is best if enough soil moisture is available for seed to germinate rapidly. The seedlings will be well started before winter and they will be developed well enough in the spring to escape June seedling blights that often affect spring-planted seedlings.

Where the fall season is too short for seedlings to get a good start,

Soil Protection

Protect your land from wind erosion. If you seed in the fall on summer fallow or other clean seedbed, sow a small-grain companion crop with the grass at no more than half the usual rate for grain production.

If you prepare the soil in late summer or fall for spring seeding, leave the surface of the soil rough so that it will resist wind erosion.

seed in early spring. Early spring seeding usually is advisable in other areas also, if you cannot seed in early fall.

Seed on summer fallow or clean grain stubble in fall or early spring. If you seed on stubble in the spring, work the soil lightly to destroy weeds.

Seed on clean corn ground in spring. Level the ridges before seeding. Cultivate to kill weeds if seeding is delayed until late spring.



WYO-504

Before it was seeded to crested wheatgrass, the range to the left of the road was as poor as the sagebrush-infested range to the right.

If you are seeding abandoned farmlands that are covered with annual weeds, seed in late fall, directly in the weedy cover.

If the land is covered with perennial weeds, cultivate before seeding. Cultivate in late summer and seed in early fall. If you do not plan to seed until spring, let the land remain in weeds over winter; the weeds provide protection against erosion. Cultivate and seed in spring.

RATE OF SEEDING.—In the dry areas of the West, use 4 to 6 pounds of seed per acre drilled in rows 10 to 14 inches apart. In more favorable areas, drill seed at a rate of 8 pounds per acre in rows 6 or 7 inches apart. You can use lower rates of seeding, but it may take 1 or 2 years longer to get a full stand.

METHOD OF SEEDING.—If possible, drill the seed. If the terrain is too rough for drills to be used, broadcast the seed. Broadcast seedings are most successful if the seed is covered.

Ordinary farm drills are satisfactory for most seedings. Install seed agitators for uniform flow.

Use double-disk drills on well-packed, nontrashy seedbeds. Use single-disk drills where you must cut through trash. Single-disk drills leave the soil surface rough and resistant to blowing.

A press drill is good for seeding on a clean seedbed; it places the seed in closer contact with the soil than other types of drills.

Deep-furrow drills are useful for firm, trashy seedbeds and for range seeding. For seeding in

rough areas, reinforce standard drills or get special range-seeding equipment from State or Federal agencies that do reseeding work.

To seed crested wheatgrass in widely spaced rows for seed production, use either a grain drill with the extra cups covered or a shoe-type corn planter.

If you use a corn planter, modify the plates to seed the correct amount and use a gasket at the bottom of the hopper to keep the seed from working out.

For best results, the grain drill or corn planter should be equipped with a packing wheel to press the soil firmly around the seed.

Seed no deeper than $\frac{3}{4}$ inch in heavy soil or $1\frac{1}{2}$ inches in light soil.

If the seedbed is loose, release spring pressure on the drill disks to keep the drill from planting too deeply, or use depth-control bands on the disks.

MANAGEMENT

New Stands

Do not graze or mow spring seedings the first year. If the plants stand, they build strong root systems and hold snow over the first winter. Mow early the following spring.

Early fall seedings may make enough growth by the middle of the next summer to be harvested or grazed. If broadleaf weeds become too thick before midsummer and no legume is mixed with the grass, spray the grass with 2,4-D at rates used for cereal crops. If weeds become too heavy in mixed

plantings, mow them. Do not mow shorter than 6 inches.

Pasture

Turn livestock on crested wheatgrass in the spring when the grass reaches a height of about 4 inches.

Crested wheatgrass pasture is at its best during the first 30 to 45 days in the spring. After that, the pasture decreases rapidly in quality as the grass matures. In northern parts of the crested wheatgrass area and at higher elevations, the decline in quality is less rapid. In those areas, crude protein and digestible nutrient content of the grass remains high enough for good grazing most of the summer.

Pasture should be grazed heavily enough so that 50 to 70 percent of the growth is removed each year. Lighter grazing results in uneven, stemmy growth of the grass.

A good plan is to graze crested wheatgrass early and native range later. You can use up to 1 acre of crested wheatgrass for every 5 acres of native range. For best management the crested wheatgrass should be fenced separately. Where native range is not available, other late-maturing forage crops should be available to provide feed after crested wheatgrass matures.

When fall moisture is adequate, crested wheatgrass produces considerable green growth late in the season. Do not graze this new growth heavily or growth will be reduced the next spring.

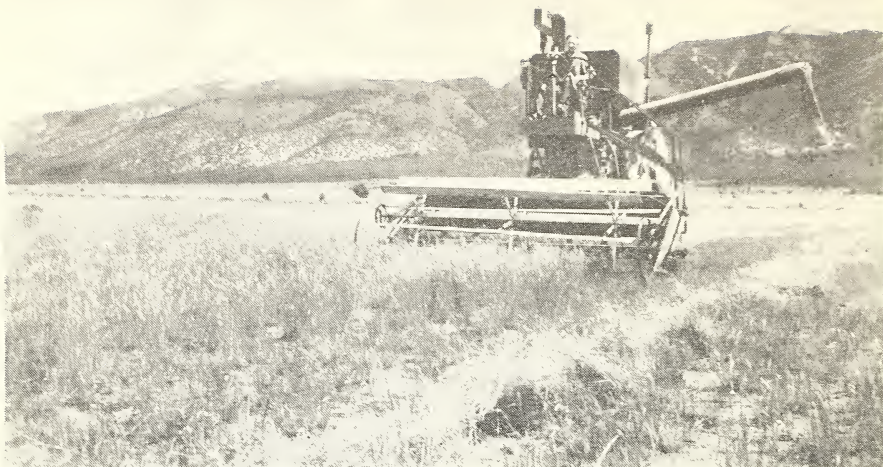
Leave old growth over winter to catch snow. Mow it in early spring. Rotary mowers are excellent for mowing old growth.

After the first year, apply nitrogen fertilizer in late fall or early



NEV-828

Crested wheatgrass on reseeded range provides nutritious forage in spring and fall.



468395

Combining crested wheatgrass. In addition to providing forage in spring and fall, this crested wheatgrass field yields up to 300 pounds of seed per acre.

spring. Rates of 40 to 80 pounds of nitrogen per acre are profitable. Fertilizing is necessary for maximum production of forage, even on fertile lands. It also is the best way to renovate old stands for pasture or hay.

SEED PRODUCTION

Crested wheatgrass produces good seed yields and matures early. It can be planted, cultivated, harvested, and cleaned with machinery available on most grain farms.

For best yields, seed in rows 36 to 42 inches apart at a rate of 3 to 5 pounds per acre.

After the first seed crop has been produced, fertilize each year with 50 to 100 pounds of nitrogen per

acre. Apply phosphorus also, in areas where the soil is deficient.

Harvest seed as soon as possible after it reaches the stiff dough stage. Harvest as you do small grains.

Dry all seed that has been direct combined so it will not heat in storage.



Another USDA publication about crested wheatgrass is Farmers' Bulletin 2056, *Reseeding Southwestern Rangelands With Crested Wheatgrass*. If you wish a copy, write to U.S. Department of Agriculture, Washington 25, D.C.

This leaflet supersedes Leaflet 104, *Crested Wheatgrass*.

Washington, D.C.

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